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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/617,021

07/11/2003

Hiroaki Waki

030471

2701

38834 7590 12/28/2006  
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WASHINGTON, DC 20036

EXAMINER

LUDLOW, JAN M

ART UNIT

PAPER NUMBER

1743

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/28/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/617,021	WAKI, HIROAKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jan M. Ludlow	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/11/03, 10/6/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abedi (US6413431).

Abedi teaches a chromatograph including UV and MS detectors. The fraction collector is triggered when the presence of a compound of interest is detected by UV and/or MS detection (col. 6, lines 58-62; col. 13, line 59-col. 14, line 2). Switching valves such as that controlling the fraction collector/waste connection are under computer control (col. 3, line 37). A time delay between the MS, UV and fraction collector is determined using a standard (col. 14, lines 10-15).

Abedi fails to explicitly teach a binary converter, logical operator or a shift time canceller.

It is the examiner's position that the teaching that the fraction collector is triggered when the presence of a compound of interest is detected by UV and/or MS detection suggests assigning a binary value to portions of each the chromatograms derived from the UV and MS detectors, e.g., peak detected yes/no in UV; peak detected yes/no in MS, and a logical operation of "AND" or "OR" in that either or both of the detectors can be used to trigger the fraction collector. Further, it would have been obvious to provide a binary converter and a logical operator to do so in a computer controlled device. It would have been further obvious to provide a time shift canceller in order account for the time shifts to synchronize the data collection, comparison and fraction collection as the determination of delay times suggests.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abedi as applied to claims above, and further in view of Fischer et al (2002/0121468).

Fischer teaches a chromatograph including UV (13), MS (18) and ELSD (18 or 70) detectors. The fraction collector is triggered under automatic control when the presence of a compound of interest is detected by one or more of the detectors [0027]. A time delay between the MS, UV, ELSD and fraction collector is determined using a standard and used to automatically control the apparatus ([0010-0011, 0029]).

It would have been obvious to provide an ELSD detector in Abedi in order to provide an alternative destructive detector and/or a quantitative detector as taught by Fischer. It would have been obvious use the chromatogram generated to control the fraction collector in order to use one or more known characteristics at the one or more detectors to control the collector as taught by Fischer.

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5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (2002/0121468).

Fischer teaches a chromatograph including UV (13), MS (18) and ELSD (18 or 70) detectors. The fraction collector is triggered under automatic control when the presence of a compound of interest is detected by one or more of the detectors [0027]. A time delay between the MS, UV, ELSD and fraction collector is determined using a standard and used to automatically control the apparatus ([0010-0011, 0029]).

Fischer fails to explicitly teach a binary converter, logical operator or a shift time canceller.

6. It is the examiner's position that the teaching that the fraction collector is triggered when the presence of a compound of interest is detected by one or more of the detectors suggests assigning a binary value to portions of each the chromatograms derived from the detectors, e.g., peak detected yes/no in UV; peak detected yes/no in MS; peak detected yes/no in ELSD, and a logical operation of "AND" or "OR" in that one or more (e.g., all) of the detectors can be used to trigger the fraction collector. Further, it would have been obvious to provide a binary converter and a logical operator to do so in a computer controlled device. It would have been further obvious to provide a time shift canceller in order account for the time shifts to synchronize the data collection, comparison and fraction collection as the determination of delay times suggests.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Kibbey (5670054) corresponds to WO 97/38303 cited as an X reference on the Search Report of record, but does not teach the instant invention because it uses UV and MS measurements in an analytical HPLC to identify peaks with UV alone in a preparative HPLC.
9. Connelly (5,938,932) corresponds to WO 99/25452 cited in the Search Report. Connelly teaches an HPLC system with UV detector 516, mass spec 510 and ELSD 512. Chromatogram signals from a first chromatogram are compared to threshold values (col. 8, lines 15-17) and signals from the second chromatogram are compared to elution times (col. 8, lines 32-37). The UV detector can be used for secondary confirmation of peak and compound presence (col. 9, lines 15-20). Connelly fails to teach using the resultant signal to control a fraction collector.
10. Umemura cited in the Search Report teaches using a UV detector to control measurement timing in a Mass Spec.
11. Abedi corresponds to EP 1162456 cited in the Search Report.
12. Applicant's arguments filed October 6, 2006 have been fully considered but they are not persuasive.
13. Applicant argues that the binary converter, logical operator and shift time canceller are the gist of the instant invention, and that the examiner has made a conclusory and unsupported statement that such elements are suggested by the prior art. This argument is not persuasive because computers inherently work by converting EVERYTHING to binary form, and then performing logical operations on that binary data. The examiner has clearly explained how the teachings of the prior art teach peak

detection, which is a yes or no event, i.e., is the peak present or not (in binary, that would be "0" or "1"), and then collect peaks based on one or both of the detectors, which is an OR/AND decision, i.e., "OR" for either one of the detectors and "AND" for both of the detectors (in computers, "OR" and "AND" are logical operators). It would have been obvious to provide the necessary computer components to perform the functions described in the prior art, in the computer controller described in the prior art. Further, the prior art teaches correcting for time delays, again by computer, suggesting the time shift determiner and canceller of the dependant claims.

Applicant has not refuted these arguments.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-

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1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jan M. Ludlow  
Primary Examiner  
Art Unit 1743

Jml  
December 21, 2006





Fig. 5  
PRIOR ART

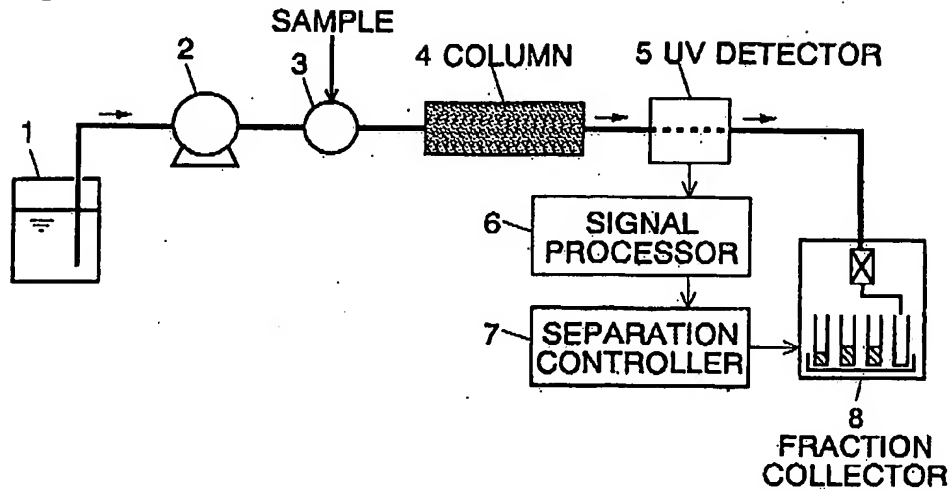
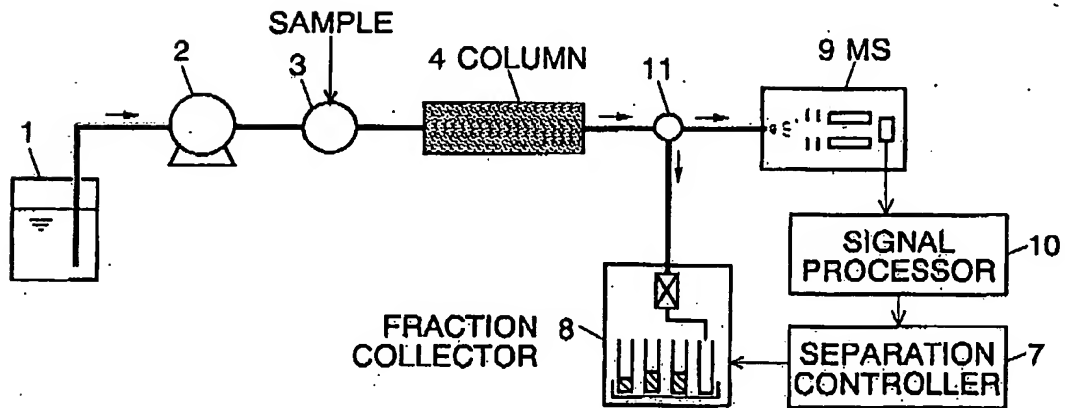


Fig. 6  
PRIOR ART



Approved  
12/2/2006